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The Controllable Lifestyle Factor and Students' Attitudes about Specialty Selection

RICHARD W. SCHWARTZ, M.D., JOHN V. HALEY, Ph.D., CHERYL WILLIAMS, ROY K. JARECKY, Ed.D., WILLIAM E. STRODEL, M.D., BYRON YOUNG, M.D., and WARD O. GRIFFEN, Jr., M.D., Ph.D.

Abstract—Questionnaires were distributed to 346 fourth-year students in nine medical schools. The students were asked to state their selected specialty and to rank the importance that each of 25 influences, listed as questionnaire items, had had in making their choice of specialty. Factor analysis showed that particular items were significantly associated with particular factors. The first factor emphasized perceived lifestyle (items in this category gave importance to remuneration, personal time, and prestige); the second factor emphasized cerebral activities and a practice orientation; and the third factor stressed altruistic values and attitudes. The authors classified the selected specialties into three groups: those characterized as having a non-controllable lifestyle (NCL), those with a controllable lifestyle (CL), and surgery. (CL specialties were defined as those that allow the physician to control the number of hours devoted to practicing the specialty.) Data were analyzed using factor analysis, and analysis of variance, and the Scheffé method. Analysis indicated that the perceived lifestyle factor was most closely associated with the responses of those students choosing CL specialties. Furthermore, this factor received the highest total loading of the three factors from all the students, thus indicating the level of interest in lifestyle factors. Responses to items that defined the cerebral and practice factor were highest from the group of students choosing CL specialties and lowest from the group choosing NCL specialties. The NCL students scored highest in the altruism factor and the CL students scored the lowest. The surgery and NCL groups were similar in attitude patterns, and both were substantially different in attitude patterns from those of the CL groups. These findings were similar for the students from all institutions, regardless of variables such as geography or type of funding, and have implications for identifying students who may be most likely to enter primary care specialties. The results possibly reflect an increase in competitiveness among academically capable students for the limited number of first-year and second-year CL residency positions. Finally, results may reveal the social attitudes and values with which many present-day students tend to identify as compared with those of medical students who were graduated in the previous two decades. *Acad. Med.* 65(1990):207–210.

Traditionally, factors such as specialty content, following a role model, specialty prestige, opportunities for cognitive performance, personality characteristics, and future financial remuneration have been important in the choice of specialty training by graduating medical students. With changes that have occurred in American cultural values and concurrently in the practice of medicine, factors such as the control of work hours, the likelihood of litigation, length and mode of training, and employment opportunities have become increasingly important.

Recent trends in the specialty choice of medical students have indicated that primary care specialties, such as internal medicine and family practice, are no longer popular.[1,2] In another study,[3] some of the authors of the present study demonstrated that the most academically successful medical students (that is, those in the top 10% of their classes) are increasingly choosing "controllable lifestyle" (CL) specialties. (These are specialties that allow the physician to control the number of hours devoted to practicing the specialty.) Furthermore, in a second study[4] the authors have shown that young physicians engaged in primary care and surgical specialties are switching to CL-type specialties, thus increasing an already critical need for more primary care practitioners. Medical educators are searching for information that will enable medical school admissions committees to select a higher percentage of students who are more likely to choose a primary care specialty.

The purpose of this study was to disclose the relationship between (1) the kinds of influences that selected students said were important in their

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specialty selections, and (2) the specialties that they selected.

Method

A 25-item questionnaire was developed that asked fourth-year students to list their specialty choice and to rate the degree of importance to that choice of the following: (1) ten influences, such as clerkship experiences, classmates, and clinical role models; (2) ten standard specialty characteristics, such as types of patients to be cared for, number of hours per week of work, and presumed level of specialty prestige; and (3) five personal long-term goals, such as to provide community service, to enter academic medicine, and to practice in a rural area. The questionnaire was sent in 1988 to nine U.S. medical schools* and distributed to their fourth-year students, a total of 1,082 students. Four schools were located in the Midwest, two in the South, two in the Southwest, and one in the Northeast. The questionnaires were completed before graduation by 346 of the students, or 32% of the total group. The proportions of fourth-year students who responded from the individual schools varied widely; for example, 48% responded from the University of Arkansas and 44% from the University of Arizona, but only 7% returned completed questionnaires from the University of Louisville. The other schools had percentages of return ranging from 24% to 38%. For some of the schools, the number of respondents might be considered representative of the fourth-year class, but for others this was not the case. Therefore, no claims can be made that the respondents were representative of the medical schools that cooperated in the study.

The respondents rated each item on a Likert-type scale of 1 to 5, using the following labels: 1 = of no importance; 2 = of minor importance; 3 = of some importance; 4 = very important; and 5 = critically important. They also indicated their specialty choice. Eight students who were undecided were eliminated from the analysis.

The specialties selected were subdivided by the authors into three groups: non-controllable lifestyle (NCL); controllable lifestyle (CL); and surgery. Surgery, although logically a part of the NCL group, was considered separately because of a special interest in this specialty on the part of the investigators. The NCL specialties were internal medicine, family practice, pediatrics, and obstetrics-gynecology. The CL specialties were anesthesiology, dermatology, emergency medicine, neurology, ophthalmology, otolaryngology, pathology, psychiatry, and radiology. "Surgery" comprised general surgery and the surgical specialties.

The 25 questionnaire items were correlated and factor-analyzed using the principal-components method. The factors were then rotated to simple structure using the Varimax procedure. Scores were obtained for each student on each factor by summing the student's scores on the questionnaire items that defined that factor. These scores were then compared across specialty groups using a one-way analysis of variance. Additional comparisons were made across medical schools to see whether school bias accounted for any of the differences found.

Results

Three factors emerged. Factor I had six questionnaire items with high loadings. (A high loading reflects the magnitude of the correlation of that item with the factor. In this study, a correlation of .30 or greater was considered high.) Since all of these items related to remuneration, personal time, and prestige, this factor was defined as the "perceived lifestyle" factor. Four items had high loadings for factor II, which was defined as the "cerebral and practice orientation" factor because the items emphasized opportunities for cerebral activities and for a variety of practice experiences. Factor III had four items with high loadings also and was defined as the "altruism" factor to reflect the items' emphasis on altruistic values and attitudes. Table 1 lists the items that defined each factor and the corresponding factor loadings.

Each student was given a score for each factor. If a student did not respond to all the items defining a factor, none of that student's responses were used in the analysis of that factor. This was the case for 12 students for the factor I analysis, 82 for factor II, and 30 students for the factor III analysis.

An analysis of variance was used to compare the scores of the three specialty groups for each of the three factors. (Hereafter, these scores are called "factor scores.") Using the Scheffé method, a posteriori comparisons were made. Table 2 presents the means and standard deviations for each of the scores. The CL group placed greater emphasis on the items that defined the perceived lifestyle factor than did the NCL and surgery groups. The latter two groups placed about the same emphasis on these items. The cerebral and practice orientation items were rated the highest by the CL group, followed by the surgery group, with the NCL group scoring the lowest. Significant differences regarding these items were found only between the CL and the NCL groups. Finally, the NCL group gave the highest ratings to the altruism items and the CL group gave the lowest, with the surgery group in the middle. Both the surgery and the NCL groups differed significantly from the CL group regarding these items, although they did not differ significantly from each other.

*Washington University School of Medicine, St. Louis, Missouri; East Tennessee State University James H. Quillen College of Medicine, Johnson City; the University of Arizona College of Medicine, Tucson; the Medical College of Georgia School of Medicine, Augusta; State University of New York Health Science Center at Syracuse College of Medicine, Syracuse; Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, North Carolina; the University of Louisville School of Medicine, Louisville, Kentucky; the University of Arkansas College of Medicine, Little Rock; and the University of Kentucky College of Medicine, Louisville.

The factor scores of the groups of students at the nine medical schools were compared by using a one-way analysis of variance. There were a significant differences among the schools for factors II and III but not for factor I. The purpose of this comparison was to see whether a school bias could account for differences found among the CL, NCL, and surgery groups. A comparison of the three groups within each school indicated this was not the case. For factors I and III, all nine schools followed the same pattern observed when the scores of the schools were pooled together. Seven of the nine schools followed the same pattern for factor II. These patterns were not always significant, due to loss of power resulting from the reduced sample size. Nevertheless, they were consistent with the main findings, suggesting that the differences observed in the pooled comparisons were true for the students who filled out the questionnaire from each of the nine medical schools.

Table 1

Questionnaire Items Defining Each of Three Factors and the Degree of Loading of Each Item for Its Associated Factor, 1988*

Factors and Associated Items	Factor Loading†
Perceived lifestyle factor	
Potentially high remuneration	.54
Number of work hours/week in practice	.84
Adequate time for pursuit of avocational activities during practice	.79
Perceived number of call nights during practice	.80
Presumed level of specialty prestige	.48
Length of residency program	.45
Cerebral and practice activities factor	
Clerkship experience at the respective medical centers	.50
Clinical faculty role models	.51
To enter academic medicine	.58
To practice in a large urban area	.47
Altruism factor	
Non-faculty physician role models	.45
Types of patients to be cared for	.50
To provide community service	.48
To practice in a rural area	.56

*A total of 346 fourth-year medical students from nine medical schools were given a 25-item questionnaire that asked them to rate various influences basic to selecting their specialty. The items were correlated and factor-analyzed. Three factors emerged: the "perceived lifestyle" factor (items in this category gave importance to remuneration, personal time, and prestige); the "cerebral and practice" factor, defined by items that emphasized cerebral activities and a practice orientation; and the "altruism" factor, which stressed altruistic values and attitudes.

†An item's factor loading reflects the magnitude of the correlation of that item with the factor. In this study, a correlation of .30 or greater was considered high.

Table 2

Means of Students' Scores on Groups of Questionnaire Items, Each of Which Defined One of the Three Factors Describing the Students' Orientation for Each of the Three General Types of Specialties Chosen, 1988*

	Factor								
	Perceived Lifestyle‖			Cerebral and Experiential¶			Altruism**		
General Specialty Type	Mean	SD	No. Students Choosing Type of Specialty	Mean	SD	No. Students Choosing Type of Specialty	Mean	SD	No. Students Choosing Type of Specialty
Controllably lifestyle†	20.74	5.00	113	11.44	3.11	87	11.23	2.62	108
Noncontrollable lifestyle‡	18.42	4.82	165	9.26	4.24	129	13.59	2.73	152
Surgery§	18.21	4.15	48	10.68	3.38	40	12.94	2.61	48

*A total of 346 fourth-year medical students from nine medical schools were given a 25-item questionnaire that asked them to rate various influences basic to selecting their specialty. The items were correlated and factor-analyzed. Three factors emerged: the "perceived lifestyle" factor (emphasizing remuneration, personal time, and prestige); the "cerebral and practice" factor (emphasizing cerebral activities and practice orientation); and the "altruism factor" (emphasizing altruistic values and attitudes). Each student was given a score for each factor; each score was the sum of the ratings on the items with high loadings for the particular factor. Each mean score for each factor listed in the table is the mean of the scores of the specific group of students whose specialties were of a particular general specialty type.

†The following specialties were classified by the authors as "controllable lifestyle" (CL) specialties (that is, those that allow the physician to control the number of hours devoted to practicing the specialty): anesthesiology, dermatology, emergency medicine, neurology, ophthalmology, otolaryngology, pathology, psychiatry, and radiology.

‡The following specialties were classified by the authors as "noncontrollable lifestyle" (NCL) specialties: internal medicine, family practice, pediatrics, and obstetrics-gynecology.

§Surgery, although a part of the noncontrollable lifestyle group, was considered separately because of a special interest in this specialty on the part of the authors. The surgery group comprised general surgery and the surgical specialties.

‖For the perceived lifestyle factor, CL versus NCL specialties was significant ($p < .05$), and CL versus surgery specialties was significant ($p < .05$).

¶For the cerebral and practice factor, CL was significantly greater than NCL ($p < .05$).

**For the altruism factor, NCL and surgery were significantly greater than CL ($p < .05$).

Discussion

Definite trends have evolved in the investigation of the significant factors affecting medical student specialty choice.[5] In the 1960s and early 1970s, interest centered on cognitive factors. Student personality characteristics and attitudes as well as perceived specialty status dominated the late 1970s. Since the early 1980s, investigators have concentrated on examining factors that occur during or after medical school. Perhaps the major examples of recent investigation of this type are the studies reporting the obvious combination of medical student aversion towards primary care and attraction for CL specialties.[1-4]

Two recent studies have suggested that medical students are increasingly choosing CL specialties.[3,4] Since these CL specialties are becoming more competitive, top students are selecting them rather than the NCL specialties. As a result, the quality of students selecting primary care and surgery specialties will begin to decrease. This trend has already affected primary care, as evidenced by a decline in student interest since 1981.[1,2]

The results of the present study suggest that the students choosing a CL specialty placed more emphasis on perceived lifestyle factors than did the students choosing either primary care or surgery specialties. Concurrently, the CL group placed less emphasis on items pertaining to altruism than did the other two groups. This is in direct contrast to a 1971 study by Paiva and Haley,[6] in which students choosing internal medicine and surgery ranked social values lowest. The CL group placed the highest emphasis on the cerebral and practice orientation items. This relates favorably to work performed by Essex-Sorlie and Sorlie[5] that demonstrated that students selecting anesthesiology, pathology, and radiology recorded the highest mean performances on variables associated with prematriculation achievement. Their study also showed that students choosing internal medicine and surgery achieved the highest mean scores during medical school matriculation. This appears to be changing as top medical students are increasingly choosing CL specialties.[3]

One major finding of the present study was that there are significant differences in the importances of the factors examined. Students selecting CL specialties clearly rated themselves highest in items classified by the perceived lifestyle factor and lowest in those under the altruism factor. Zimet and Held[7] in 1975 performed a longitudinal study of medical student career choices and focused on beliefs about status, social attractiveness, and similarity to self of various specialty practitioners. The results, which were representative of other such studies, demonstrated that surgery ranked the highest in status while ranking the lowest in social attractiveness; not surprisingly, family practice ranked conversely to surgery on both scales. Even with those clear differences, the majority of students, regardless of future specialty choice, saw themselves as personally being most similar to the "typical" family practitioner, in terms of the characteristics they attributed to this type of practitioner. Such characteristics included warmth, concern for patients, and orientation to the other person rather than to a procedure or test. The data of the present study strongly imply that the current generation of medical students are either much more honest than their predecessors or much less altruistic. Given the current "yuppie" atmosphere prevalent in today's society, the authors suspect that, disturbingly, the latter hypothesis is true.

These results may be used to identify a group of medical students whose initial interest in medicine appears to lie outside the primary care fields. Other authors[6,7] have suggested that appropriate examination of students' attitudes about both themselves and medical specialties may differentiate, upon medical school entrance, the eventual specialty choices of medical students. This information, combined with cognitive performance at both the undergraduate and medical school levels, is needed to recruit and admit medical students whose eventual career intention is that of primary care. Faculty intervention tactics during medical school matriculation, such as appropriate inpatient and outpatient clinical experiences and role modeling, may be needed to make specialties such as family practice, internal medicine, pediatrics, and surgery more attractive to the current generation of medical students.

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